FXC7 Series DC Contactor Specification

Customer	General Specification
Product Name	DC Contactor
Part Number	FXC7-500T-P FXC7-500TH-P FXC7-500TC-P
Date	2020/04/01
Validity	2 Years
Version	2020V1.0

DC Contactor

Feature

●**Safe**：Fully sealed with epoxy resin, contact and coil will not be oxidized, product performance is not affected by external environment, no arc outbursts, can be worked in explosive and harmful environment.

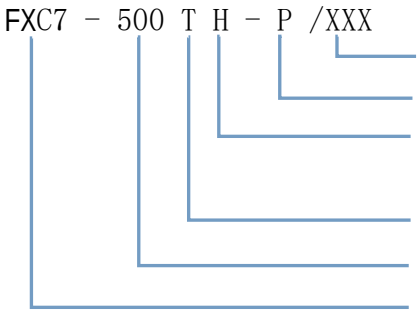
●**Reliable**：Adopt DC high voltage non-polarity design, the breaking capacity is higher and more reliable, convenient and reliable installation or wiring.

●**Good for environment**：All components meet the latest ROHS environmental requirements.

●**Application**：Ordinary, quick charging, auxiliary contactor. Can be used in EV, charging equipment, photovoltaic system, etc.

●**Approval**：UL, CE

Ordering



Customer number
Rated control supply voltage Us：（P：12/24VDC）
Auxiliary contact type：（H: with normally open, C: with normally closed
Nil: without)
Contact material：T：Alloy
Rated current 500：500A
Company abbreviation：FX
C： DC Contactor
7： Design number

DC Contactor

Basic Parameter

Contact parameter		
Main contact	Rated operational current Ie	500A
	Rated operational voltage Ue	12～1000VDC
	Min. load	1A12VDC
	Main contact type	1SH（SPST NO DM）
	Nominal resistance of main circuit	MAX 30mV（@100A）
	Main contact mounting	M8 external thread
	Connecting torque	10～12N·m
	Max. switching current （more than one cycle）	2500A300VDC
Auxiliary contact	Max. current	30VDC 2A；125VAC 3A
	Min. current	8VDC 100mA
	Contact resistance	＜0.15Ω

Coil parameter	
Rated voltage Us	12/24VDC
Operating voltage range	9～36 VDC
Pick up voltage	8～9 VDC
Release voltage	6～7 VDC
Coil power	holding：3.2W
Inrush current	3.8A（0.1s)(@12V）
Holding current	0.267A@12V；0.133A@24V
Pick up time（@Us）	≤45ms
Releasing time（@Us）	≤10ms
Bounce time（@Us）	≤5ms

Note: The above parameters are normal temperature rating, if other parameters needed, can customize.

Life characteristics		
Mechanical Life		300,000
Resistivity load life（L/R≤1ms）		See next page
Capacitive load life (RC=1ms ， only for connecting)	600A	30,000
Note: For capacitive load life, when the contactor is used to control the main circuit of charge and discharge, the pre-charge circuit should be added. If there is no pre-charging path, a transient large current will be generated when the contactor closes, which may cause the contactor to stick.		

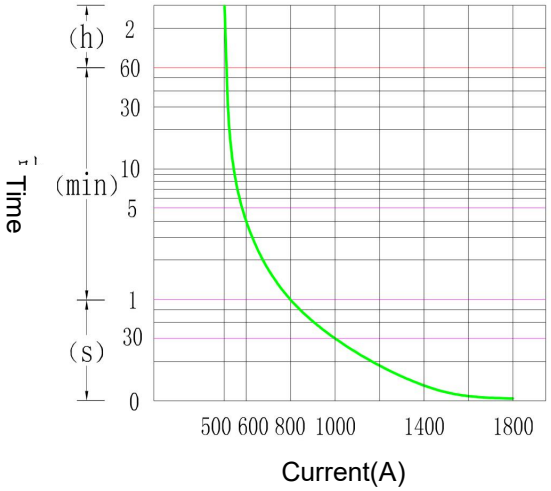
Environmental characteristics		
Shock	Stability test	196m/s² （20G）
	Strength test	490m/s² （50G）
Resistance to vibration		10～2000Hz，20G
Operating ambient temperature		-40℃～+85℃
Operating ambient humidity		5%～85% RH
IP Grade		IP67(inner space)
Altitude		≤4000m

Electrical characteristics	
Dielectric withstand voltage	AC 3000V
Insulation resistance	≥1000MΩ@1000VDC
Nominal insulation voltage Ui	1000V

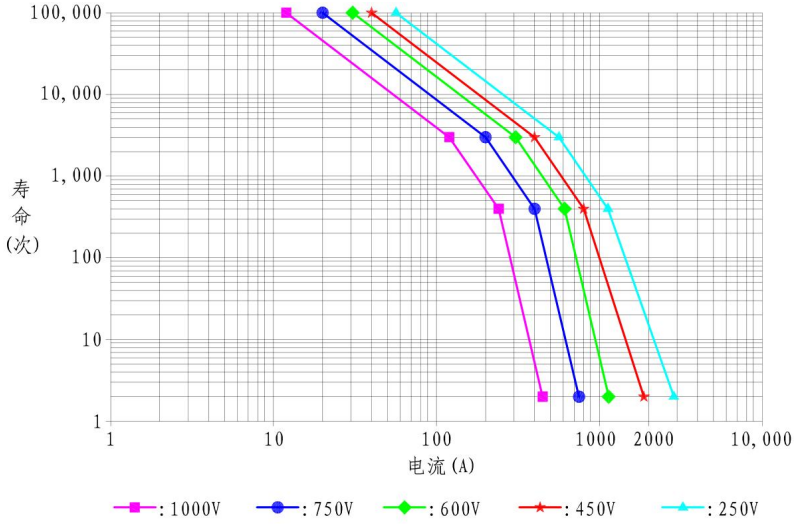
Other	
Weight	Approx.550g，with auxiliary 555g
The cross sectional area of an external conductor	≥185mm²
Case mounting hole torque	2.5～3.5 N·m

DC Contactor

Short overload capacity curve

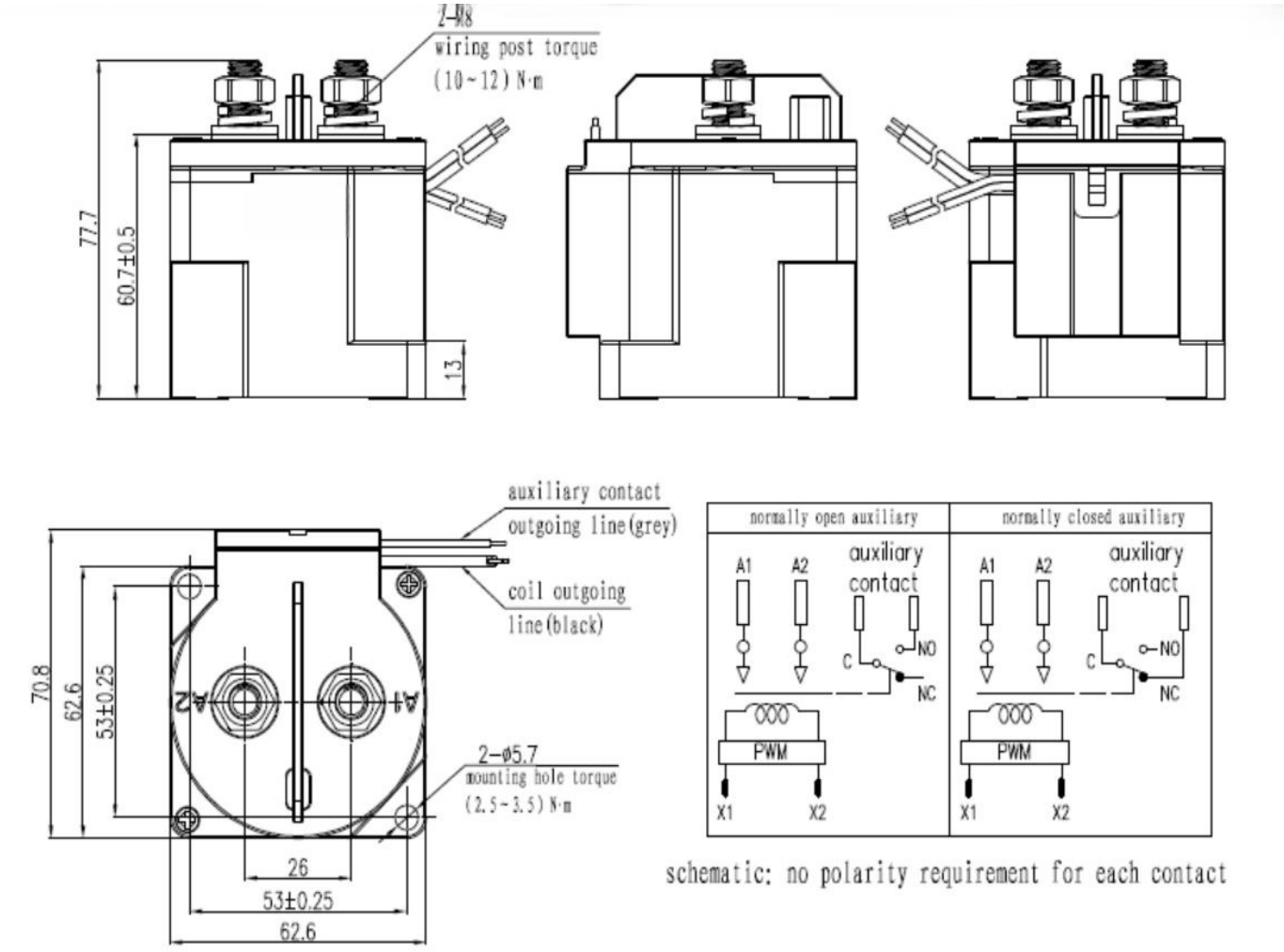


Cut-off life curve of resistive load



Note: Except for special note, the ambient temperature of electrical durability test is 23℃, and the on-break ratio is: 1s: 9s

Outline and wiring schematic diagram



Note: Control coil wire length 300±20mm

Product without tolerance, when ≤10mm, tolerance ±0.3mm

When dimension between 10～50 mm, tolerance ±0.5mm

When dimension≥50mm, tolerance ±0.8mm

DC Contactor

Notice

1. Using spring washers to prevent loose screws when installing contactors.

2. The torque of tightening screws should be within the specified range. Exceeding the max. torque may lead to product breakage.

3. There is no polarity requirement for the main contact and the lead of the control coil of this contactor.

4. The specification products with energy saving boards are equipped with a reverse surge absorption circuit, so there is no need to use surge protector any more. We suggest that the specification products without energy saving boards should be installed with varistors as surge protector, and the use of diodes should be avoided, because this will reduce the cutting ability of the products.

5.Do not use products that have been dropped.

6.Avoid placing the product near a strong magnetic field (near a transformer or magnet) or near an object with thermal radiation.

7.Electrical life

This contactor is a high-voltage DC switch. In its final breakdown mode, it may lose its proper cutting function, so it should not be used beyond its switching capacity and life parameters (please treat this contactor as a product with specified life, and replace it if necessary). Once the contactor loses its disconnection ability, it may not work properly, so design the circuit diagram to ensure that the power can be cut off within one second.

8.Diffusion life of internal gas

The contactor adopts sealed bin contact, and the bin is filled with gas. The diffusion life of the gas is determined by the temperature in the contact bin (ambient temperature +temperature rise generated by contact electrification), so the ambient temperature should be -40℃～+85℃

9.If the coil and contact of the contactor are continuously passed at the rated voltage (or current), the power was cut off and switched on immediately. At this time, as the temperature of the coil increases, the resistance of the coil will increase, which will increase the product’s closed voltage, may cause excess of rated closed voltage. In this case, the following measures should be taken: Reduce the load current, limit the duration of continuous power or use coil voltage higher than the rated suction voltage.

10.For resistive load, the rated main contact rating shall apply, and for inductive load (L load) with L/R>1 millisecond, an inrush current protection device shall be connected to the inductive load in parallel.

DC Contactor

11.The drive circuit power of the product coil must be greater than that of the product coil, otherwise the cutting ability of the product will be reduced.

12.Be careful not to let sundries and grease on the main lead out end, and the external wiring terminal should be in reliable contact with the main lead out end of the product, or it may cause the lead out end heat.

13.For the specification products with energy saving plate, after being connected, the coil will start to switch automatically after about 0.1 seconds. Do not repeatedly turn off at that position, which may damage the contactor.

DC Contactor